

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION

TENTATIVE ORDER NO. R9-2002-0067  
NPDES PERMIT NO. CA 0109371

**FACT SHEET**  
**FOR**  
**S & S FARMS**  
**SWINE RAISING FACILITY**  
**SAN DIEGO COUNTY**

**1. CONTACT INFORMATION**

Regional Water Quality Control Board Contact Person:

Mr. John R. Phillips  
(858) 627-3928  
9174 Sky Park Court, Suite 100  
San Diego, CA 92123

S & S Farms Contact Person(s):

Mr. Tom Salayer and/or  
Mr. Mark Bousema  
(760) 782-9170  
(760) 744-5259  
821 Carriage Drive  
San Marcos, CA 92069

**2. FACILITY DESCRIPTION**

Tom Salayer and Mark Bousema own and operate a swine raising facility in Ramona, San Diego County. The property is located in the center of Section 27, T.13.S., R.1.E., at 1650 Warnock Drive, Ramona, California. The owners will initially stock the facility with 150 sow and three or four boars and expand gradually to approximately 1500 total swine, including piglets, gilts, sow and boars at full capacity.

The owners constructed the swine raising facility with input from their contractor, equipment suppliers, and regulatory agencies including the Regional Board and the Natural Resources Conservation Service. A Waste Discharge Requirements application for the facility, submitted in January 2002, contains the design specifications and drawings prepared by Feldmann & Associates, Agricultural Engineering and Environmental Consulting, of East Peoria, Illinois.

The facility contains three structures for the housing of the swine and a treatment lagoon system consisting of two ponds. Waste produced by the swine will fall through slotted flooring in the housing structures and into collection pits containing water. The pits will be drained approximately every seven (7) days to the treatment lagoon system, where the waste will be treated and stored. The design of the waste treatment system is based upon an estimated 171 cubic feet (ft<sup>3</sup>) of total excreta per day. Sprinkler water, for cooling the swine during warm weather, and facility wash water will enter the treatment system through the collection pits. The facility is graded to prevent precipitation and runoff from entering into the waste system, except for that which falls within the berms of the lagoon.

The southernmost pond (Cell A) in the treatment lagoon system is designed to receive swine waste. Bacteria in the treatment lagoon will break down the organic waste into methane gas and carbon dioxide. Effluent from Cell A will be stored and evaporated in the northernmost pond (Cell B). The volume of water and waste in the ponds will be controlled by evaporation. During the dry season, the addition of fresh water to the system may be required to maintain minimum pond volumes. Based on S & S Farms Report of Waste Discharge, the lagoon system provides adequate storage for wastewater and runoff from a 25-year, 24-hour design storm.

### 3. **DISCHARGE DESCRIPTION**

No discharge to surface water or land application of liquid or solid waste from the treatment system is planned. The treatment lagoon system is designed for a seven (7) year sludge accumulation and storage period. After approximately seven years, the sludge will be removed from the lagoon system and disposed of according to applicable environmental regulations at the time of the disposal.

### 4. **GROUNDWATER DATA**

A shallow groundwater aquifer was encountered during preliminary test pit excavation activities at the facility. Based on information provided by the discharger, the aquifer is located approximately six and a half (6.5) feet below the bottom surface of the ponds, and approximately four and a half feet (4.5) feet below the 24-inch thick soil-polymer liner of the ponds.

Review of groundwater documentation indicates the presence of two aquifers, one shallow (approximately 16 feet below ground surface) and one deep (greater than 200 feet) below the S & S Farms facility. Analytical results of well water sampling indicate nitrate concentrations up to 250 mg/L in the area. The majority of the homes containing wells within a one-mile radius of the facility are connected to the Ramona Municipal Water District. The District provides potable water to most of the residents in the area. The majority of the wells are used for irrigation and livestock operations not affected by nitrate concentrations. Water from one drinking water well, approximately one-quarter (1/4) mile from the S & S Farms facility, is treated using reverse osmosis to make the water potable for residential uses. Due to the irrigation and livestock uses of water from the majority of the wells in proximity to S & S Farms, and the use of a treatment system for the drinking water well, the Regional Board does not consider the nitrates to be a concern at this time.

The treatment lagoon system contains a two-foot thick liner to reduce the potential of impact to groundwater from the facility. The liner is composed of slightly clayey, silty sand, and treated and compacted with a polymer mix to reduce the soil's permeability. The polymer mix, containing agents identified as SS-13 and WA-13, reacts with soil to produce a non-toxic, non-corrosive substance similar to an acrylic resin. Following the initial filling of the ponds, soda ash was added to the water. The liner was placed and compacted along the bottom and sidewalls of the ponds. Laboratory analysis of soil samples which had been compacted and treated with the polymer mix and soda ash confirmed permeability coefficients in the range of  $10^{-7}$  centimeters per second (cm/s).

### 5. **BASIN PLAN WATER QUALITY OBJECTIVES AND BENEFICIAL USES**

S & S Farms is located in the Ramona Hydrologic Subarea (905.41) of the Santa Maria Valley Hydrologic Area of the San Dieguito Hydrologic Unit. The Basin Plan established municipal and

domestic supply, agricultural supply, industrial service supply, industrial process supply, contact water recreation, non-contact water reclamation, warm freshwater habitat and wildlife habitat as beneficial uses of the surface waters; and municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply as beneficial uses of the groundwater. The  $\text{NO}_3$  concentrations in the area groundwater exceed water quality objectives. Wells in the vicinity are not used for municipal purposes except for a single residence at which the water is treated prior to use, as described in the "Groundwater Data" section of this fact sheet. The water quality objectives of the Santa Maria Valley Hydrologic Area are as follows:

Constituents	<i>Concentrations not to be exceeded more than 10% of the time</i>	
	Groundwater	Surface water
Total dissolved solids	1000 mg/L	500 mg/L
Chloride	400 mg/L	250 mg/L
Percent sodium	60 %	60 %
Sulfate	500 mg/L	250 mg/L
Nitrates	10 mg/L	-----
Nitrogen and phosphorus	-----	*
Iron	0.3 mg/L	0.3 mg/L
Manganese	0.05 mg/L	0.05 mg/L
Methylene Blue Active Substances	0.5 mg/L	0.5 mg/L
Boron	0.75 mg/L	0.75 mg/L
Odor	none	none
Turbidity	5 NTU	20 NTU
Color	15	20
Fluoride	1.0 mg/L	1.0 mg/L

- *Concentrations of nitrogen and phosphorus, by themselves or in combination with other nutrients, shall be maintained at levels below which stimulate algae and emergent plant growth. Threshold total phosphorus (P) concentrations shall not exceed 0.05 mg/L in any stream where it enters any standing body of water, nor 0.025 mg/L in any standing body of water. A desired goal in order to prevent plant nuisances in streams and other flowing waters appears to be 0.1 mg/L total P. These values are not to be exceeded more than 10 percent of the time unless studies of the specific water body in question clearly show that water quality objective changes and permissible and changes are approved by the Regional Board. Analogous threshold values have not been set for nitrogen compounds; however, natural ratios of nitrogen to phosphorus are to be determined by surveillance and monitoring and upheld. If data are lacking, a ratio of N:P = 10:1 shall be used.*

## **BASIS FOR TENTATIVE WASTE DISCHARGE REQUIREMENTS**

- California Code of Regulations, Title 27, Division 2, Chapter 7, Subchapter 2
- Code of Federal Regulations, Title 40, Parts 122, 123 and 124.
- Water Quality Control Plan for the San Diego Basin (9)

The Federal Clean Water Act (CWA) states that all concentrated animal feeding operations (CAFOs) are point sources and are subject to NPDES permitting requirements. The CWA indicates that facilities containing 2,500 large swine (above 55 pounds) are to be classified as CAFOs. The S & S Farms facility is proposing to house approximately 1,500 swine, more than half of which weigh less than 55 pounds. The CWA gives the Regional Board authority to make CAFO designations on a case-by-case basis. One of the decision factors defined in the CWA relates to an animal feeding operation's location relative to waters of the United States. An unnamed ephemeral stream is located approximately 300 feet to the north of the treatment pond system. Groundwater, as indicated above, is located approximately 4.5 feet below

the bottom of the pond liner. Due to the potential impacts to surface and groundwater in the event of a waste containment system failure, the Regional Board has designated S & S Farms as a CAFO.

In compliance with the CWA and the California Code of Regulations, tentative Order No. R9-2002-0067 prohibits discharges to any surface water bodies, or tributary thereof, unless rainfall events, either chronic or catastrophic, causes an overflow of process wastewater from a facility designed, constructed and operated to contain all process generated wastewaters plus runoff from a 25-year, 24-hour rainfall event. (Title 27, Chapter 7, Subchapter 2, Article 1, Section 22562 (a)).

The liner of the facultative lagoon system was designed to be essentially impervious to reduce the potential for impacts due to percolation. A properly designed and operated facility should not impact water quality or beneficial uses. S & S Farms is required to provide analytical data to verify that the ponds are not impacting groundwater as indicated in Monitoring and Reporting Program No. R9-2002-0067

The S & S Farms facility is designed to prevent and control odors through proper operation and maintenance. A minimum volume of fresh water will be maintained in the ponds at all times to reduce odor emissions and sludge volume. Fresh water contains a lower specific gravity than wastewater, and will tend to remain, if undisturbed, closer to the surface of the pond than wastewater. The fresh water will act as a boundary to prevent odor emissions from the wastewater to the air. Odor reducing bacteria in the ponds will be maintained in equilibrium to reduce the potential for odors.

Problems associated with CAFOs in the San Diego Region include groundwater mineralization, the addition of nitrates to groundwater, surface runoff of biodegradable and suspended material, nuisance odors, the addition of nutrients to adjacent surface water streams and other miscellaneous problems. All dairies in the Region are regulated under waste discharge requirements. These waste discharge requirements implement the regulations for confined animal facilities contained in CCR, Title 23, Division 3, Chapter 15, Article 6, Sections 2560-2565.

The major requirements contained in waste discharge requirements for CAFOs are as follows:

- (1) CAFOs must be designed and constructed to retain all facility wastewater generated, together with all precipitation on, and drainage through manured areas during a 25-year, 24-hour storm.
- (2) All precipitation and surface drainage outside of manured areas, including that collected from roofed areas, and runoff from tributary areas during the storm events described in subsection (1) of this section, shall be diverted away from manured areas, unless such drainage is fully retained.
- (3) Retention ponds and manured areas at CAFOs must be protected from inundation or washout by overflow from any stream channel during 25-year peak stream flows. Existing facilities that are protected against 100-year peak stream flows must continue to provide such protection.
- (4) New facilities shall be protected against 100-year peak stream flows.
- (5) Retention ponds shall be lined with or underlain by soils which contain at least 10 percent clay and not more than 10 percent gravel or artificial materials of equivalent impermeability.
- (6) Facility wastewater, collected precipitation and drainage may be discharged to properly operated use or disposal fields or to wastewater treatment facilities approved by the Regional Board.

Review of S & S Farms' design plans and specifications indicate that the facility, as designed, meets the above requirements.

**Regional Board Dairy Waste Management Policy (Resolution No. 87-71)**

The Regional Board adopted Resolution No. 87-71, "A Resolution Adopting Amendments to the Comprehensive Water Quality Control Plan for the San Diego Region" (Regional Board Dairy Waste Management Policy) on November 16, 1987. On March 17, 1988, the State Board adopted Resolution No. 88-35 approving the Regional Board Dairy Waste Management Policy with a few minor changes. The Regional Board Dairy policy contained in Resolution No. 87-71 is incorporated into the Basin Plan.

The Dairy Waste Management Policy contains principles and measures that are applicable to S & S Farms facility. The Regional Board's regulatory program is based upon the following principles to ensure that the goals of the Basin Plan are implemented:

- (1) The Regional Board is committed to the reasonable protection of present and future beneficial uses of groundwater.
- (2) Coordination among state, federal, and local agricultural and regulatory agencies, the dairy industry, local planning and land-use agencies is necessary to resolve potential water quality problems associated with dairies.
- (3) Cooperation between this Regional Board and the dairy industry is required when developing and implementing measures to achieve conformance with the Basin Plan groundwater objectives.
- (4) Comprehensive assessments of salt loading on the groundwater basins in the San Diego Region are necessary to develop reasonable and cost effective water quality protection measures for all nonpoint and point sources of waste.
- (5) An interim dairy wasteload regulatory program is necessary until the assessment studies noted in Principle 4 are completed. The interim program should provide a simple, region-wide approach to controlling dairy wasteloads, that may be reviewed on a case-by-case basis if necessary. The program should be easy to understand, easy to implement and enforce and provide greater protection of water quality than present practices.

As part of an overall program of dairy waste management, the following measures shall be implemented. Measures 1 – 3 and 5 – 8 below relate to the S & S Farms facility:

- (1) The Regional Board shall continue to enforce all State and Federal water quality laws, and regulations regarding dairy waste treatment and disposal, including Chapter 15, Title 23 California Code of Regulations and US EPA Effluent Guidelines and Standards for feedlots point source category (40 CFR 412).
- (2) The Regional Board shall continue to seek funding to conduct the necessary studies and develop computer models to provide an accurate assessment of existing and projected wasteloads in the various groundwater basins.
- (3) Based upon the results of the studies described in item 2, the Regional Board will revise Basin Plan groundwater objectives if warranted and specify or revise wasteload limits that will be appropriate for the point and nonpoint sources of waste, including dairies if necessary.

- (4) For an interim period, until the necessary groundwater assimilative capacity and wasteload assessment studies are completed, the Regional Board shall limit the disposal of corral manure to dairy disposal land to no more than 3 tons dry weight or 10 cubic yards per acre per year, and to cropland where crops are grown and harvested twice annually, to no more than 12 tons dry weight per acre per year. The Regional Board shall consider manure application higher than the 12 tons per acre per year limit upon demonstration that the crops require the increased manure loadings.
- (5) The U.S. Department of Agriculture, Natural Resources Conservation Service, University of California at Riverside, the State and County Departments of Agriculture and other governmental and educational institutions are encouraged to provide dairy operators with the latest technical information regarding waste disposal practices that would result in additional water quality protection.
- (6) The local land use and planning agencies are encouraged to conduct long-term planning for addressing water quality issues of new and expanded dairies in the region. The dairy industry is encouraged to provide accurate five-year projections of dairy herds at existing dairies and potential locations for new dairies to the planning agencies and to the Regional Board, so that the Board may include the required Basin Plan studies as part of the Board's triennial review process.
- (7) The Regional Board will continue to obtain and review technical information regarding the hydrologic basins and to recommend the update of Basin Plan standards if warranted.
- (8) The Regional Board encourages the implementation of water conservation measures at dairies, and the beneficial reuse of dairy farm wastewater that would replace the use of imported water.

The discharge specifications and design and operation specifications prescribed by Order No. R9-2002-0067 are consistent with the above Basin Plan provisions. No land disposal of waste is proposed and land disposal of solid or liquid waste is prohibited by Order No. R9-2002-0067.

In addition to the standard provisions, 40 CFR , 122.1-22, 122.41 and 122.61-64 incorporate additional conditions that are to be applied to all NPDES permits, either expressly or by reference.

## 6. **EXPIRATION DATE**

The expiration date for tentative Order No. R9-2002-0067 is August 14, 2007.

## 7. **MONITORING AND REPORTING REQUIREMENTS**

Requirements for monitoring and reporting for S & S Farms are found in Monitoring and Reporting Program No. R9-2002-0067.

## 8. **WRITTEN COMMENTS**

Interested persons are invited to submit written comments upon these tentative waste discharge requirements. Comments should be submitted either in person during business hours or by mail to:

John H. Robertus  
Executive Officer  
Attn: Industrial Compliance Unit

Order No. R9-2002-0067

Tom Salayer and Mark Bousema, S &amp; S Farms

California Regional Water Quality Control Board  
9174 Sky Park Court, Suite 100  
San Diego, CA 92123

All comments received by June 5, 2002 will be considered in the formulation of final determinations.

9. **PUBLIC HEARING**

In accordance with 40 CFR 124.10, the Regional Water Quality Control Board must issue a public notice whenever tentative NPDES permits have been prepared and the tentative permits must be brought before the Regional Water Quality Control Board at a public hearing. The public notice must be issued at least 30 days prior to the public hearing.

Tentative Order No. R9-2002-0067 will be considered by the Regional Board at a public hearing on August 14, 2002, starting at 9:00 a.m. at the Regional Water Quality Control Board Meeting Room, 9174 Sky Park Court, San Diego, California. A notice of public hearing for the issuance of Order No. R9-2002-0067 has been published in the San Diego Union Tribune at least 30 days prior to the August 14, 2002 Regional Board meeting.

10. **ADDITIONAL INFORMATION**

For additional information, interested persons may write to the following address or contact Mike Corry of the Regional Board staff at (858) 467-3272.

Attn: Mike Corry  
California Regional Water Quality Control Board  
9174 Sky Park Court, Suite 100  
San Diego, CA 92123

Copies of the tentative NPDES waste discharge requirements and other documents (other than those that the Executive Officer maintains as confidential) are available at the Regional Board office for inspection and copying according to the following schedule (except holidays):

Monday and Thursday:	1:30 p.m. to 4:30 p.m.
Tuesday and Wednesday:	8:30 a.m. to 11:30 a.m. and 1:30 p.m. to 4:30 p.m.
Friday:	8:30 a.m. to 11:30 a.m.